

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 1-13 have been amended.

Claims 14-34 are being added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-24 are now pending in this application.

Applicants wish to thank the Examiner for granting the interview of July 21, 2005. In the interview, which is now of record with an interview summary, the Examiner agreed that the claim language overcame the previous prior art rejection. The Examiner also noted that an additional prior art search would be necessary.

Claim of Priority under 35 U.S.C. § 119

The Office Action Summary acknowledges Applicants' claim for priority under 35 U.S.C. § 119. However, the Office Action Summary states that the certified copy of the priority document has not been received. Applicants note that a certified copy of the priority document was included with the filing of the current application. Applicants respectfully request that the Office acknowledge receipt of the certified copy of the priority document in the next Office communication.

Rejection under 35 U.S.C. § 102

Claims 1-13 are rejected under 35 U.S.C. § 102(b) as being anticipated by Nakamura et al. (U.S. Patent 6,044,321). This rejection is respectfully traversed.

Claim 1 requires an information providing apparatus for a vehicle that includes “an operation part configured to provide a contact possibility of the vehicle contacting with an object that is present in front of the vehicle according to relative motion between the vehicle and the object; an information providing unit configured to provide contact possibility information by applying a negative acceleration to the vehicle, the negative acceleration being produced according to a correction value that is set by the information providing unit according to the contact possibility and is applied to at least one of the driving force and the braking force of the vehicle; and a controller configured to change the correction value according to a speed of the vehicle.”

Claim 12 requires an information providing apparatus for a vehicle that includes “an operation means configured to provide a contact possibility of the vehicle contacting with an object that is present in front of the vehicle according to relative motion between the vehicle and the object; an information providing means configured to provide contact possibility information by applying a negative acceleration to the vehicle, the negative acceleration being produced according to a correction value that is set by the information providing means according to the contact possibility and is applied to at least one of the driving force and the braking force of the vehicle; and a control means configured to change the correction value according to a speed of the vehicle.”

Claim 13 requires an information providing method for a vehicle by “providing a contact possibility of the vehicle contacting with an object that is present in front of the vehicle according to relative motion between the vehicle and the object; providing contact possibility information by producing a negative acceleration according to a correction value that is set according to the contact possibility and is applied to at least one of the driving force and the braking force of the vehicle; and changing the correction value according to a speed of the vehicle.”

Nakamura et al. teaches an intelligent cruise control system with a first control method that is based upon a car-to-car distance. (See U.S. Patent 6,044,321; Figure 4; column 17, lines 9-12). In the first control method a car-to-car distance d_r is measured, a relative speed V_r of the preceding car with respect to the ICC vehicle is determined using radar, a braking distance D_r is determined and compared to the current car-to-car distance d_r ,

and if the current car-to-car distance d_r is less than the determined braking distance D_r a target deceleration a_r is set for controlling an automatic braking unit. (See U.S. Patent 6,044,321; Figure 4; column 17, lines 9-67; column 18, lines 1-10). A second control method is based upon a relative speed of a preceding car to the ICC vehicle. (See U.S. Patent 6,044,321; Figure 5; column 18, lines 11-14). In the second control method a car-to-car distance d_r is measured, a relative speed V_r of the preceding car with respect to the ICC vehicle is determined, a braking time T_r is determined, a collision time T_{cr} is determined, the braking time T_r is compared to the collision time T_{cr} , and if the braking time T_r is not less than the collision time T_{cr} a target deceleration a_r is set for controlling an automatic braking unit. (See U.S. Patent 6,044,321; Figure 5; column 18, lines 11-64).

In both control methods the target deceleration a_r is the correction value that applies a negative acceleration to a vehicle by applying a braking force. However, Nakamura et al. does not teach that the target deceleration a_r is changed according to a speed of the vehicle, as claims 1, 12, and 13 require. Nakamura et al. teaches that “the target deceleration a_r is set at a value depending upon the current car-to-car distance d_r , the relative speed V_r and the estimated braking time T_r .” (See U.S. Patent 6,044,321; column 18, lines 66-67; column 19, line 1). Nakamura et al. teaches that the relative speed V_r is determined from radar measurements. (See U.S. Patent 6,044,321; column 11, lines 17-46). Therefore, because Nakamura et al. does not teach a correction value that is changed according to a speed of the vehicle, Nakamura et al. does not teach all of the required elements of claims 1, 12, and 13.

Nakamura et al. also teaches a control method that deals with counter traveling cars. (See U.S. Patent 6,044,321; column 32, lines 7-10). In this method a relative speed V_r of a counter traveling car is determined, a distance to the counter traveling car d_r is measured, a time to collision t_c is determined from the relative speed V_r and the car distance d_r , and the time to collision t_c is compared to a second threshold T_{c2} and a first threshold T_{c1} to determine if engine braking or automatic braking is needed. (See U.S. Patent 6,044,321; Figure 16; column 32, lines 7-62). However, this method does not teach a correction value that is changed according to a speed of the vehicle. Moreover, Nakamura et al. teaches that it is “desirable to set the thresholds T_{c1} and T_{c2} at such values based on the braking power of

the ICC vehicle and the automatic brake unit 4 that deceleration can be carried out in a reasonable way.” (See U.S. Patent 6,044,321; column 33, lines 12-15). Nakamura et al. also teaches that it is possible to determine the threshold values Tc1 and Tc2 based upon a deceleration target speed and the relative speed of the counter traveling car and the ICC vehicle. (See U.S. Patent 6,044,321; column 33, lines 15-20). Therefore, Nakamura et al. does not teach all of the requirements of claims 1, 12, and 13. Withdrawal of this rejection is respectfully requested.

Claims 9-11 require a classifier that is configured to classify a road on which the vehicle is running, wherein a first or second correction value is increased based upon the type of classified road. Nakamura et al. does not teach that a correction value is increased based upon the type of classified road, as required by claims 9-11. Nakamura et al. teaches a learning process for determining driving conditions, such as a preceding vehicle speed V_f , in which a time T_r to complete the learning process is modified according to prevailing conditions, such as road type. (See U.S. Patent 6,044,321; column 20, lines 35-67; column 21, lines 1-15, 57-65). Therefore, Nakamura et al. does not teach all of the requirements of claims 9-11 because Nakamura et al. does not teach a classifier that is configured to classify a road on which the vehicle is running, wherein a first or second correction value is increased based upon the type of classified road. Withdrawal of this rejection is respectfully requested.

New Claims

New claims 14-34 have been added by the above amendment. New claims 14-23 are allowable over the prior art for reasons similar to those noted above.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment,

to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

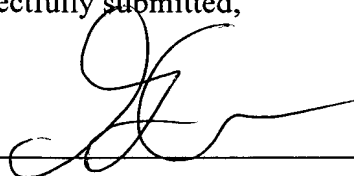
Respectfully submitted,

Date

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